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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,415	12/22/2000	Michio Yanagi	35.C14997	8025
5514	7590	05/03/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			SHAHER, RICKY D	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/742,415

Applicant(s)

YANAGI ET AL.

Examiner

Ricky D. Shafer

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 6-26 is/are pending in the application.
- 4a) Of the above claim(s) 11-13 and 15-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-9 and 14 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 19 April 2004 has been entered.

2. Applicant's arguments filed 19 April 2004 have been fully considered but they are not persuasive.

Applicant argues that by using an intermediate layer of TiO<sub>2</sub> instead of an intermediate layer of Cr, as taught by the prior art to Sakamoto ('076), results in unexpected and superior results and refers to the examiner to various pages of the specification.

However, the reference to Ota et al ('003) clearly teaches employing an intermediate layer consisting of a chromium or titanium type material between a substrate or base body and a light reflective layer in order to obtain a mirror structure with increase durability (i.e. adhesion and corrosion resistance) and longevity in the reflection properties which would obviously convey to one of ordinary skill in the mirror art the general knowledge of selectability or equivalency of one corrosion resistance material with high adhesion for another corrosion resistance material with high adhesion.

Therefore, the mere fact that applicant has recognized other latent properties or advantages in the prior art or within the knowledge generally available to one of ordinary skill in the art cannot be the basis for patentability when the differences would otherwise be obvious.

Note: In re Wiseman, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979) and *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto ('076) in view of Ota et al ('003).

Sakamoto discloses a metallic rotary polygonal mirror comprising a substrate (1) made of aluminum or aluminum alloy, an intermediate layer (2) of Cr having a thickness within the range recited by applicant, a metallic reflective layer (3) of Cu having a thickness within the range recited by applicant and at least two protective layers (4, 5), wherein a first protective layer (4) is of Al<sub>2</sub>O<sub>3</sub>, and the mirror has a surface reflectance of at least 95 percent at a selected wavelength (see Table 4), note figures 1, 2, 4 and 5 along with the associated description thereof, except for explicitly stating that the intermediate layer comprises TiO<sub>2</sub>.

Ota et al teaches it is well known to use an intermediate layer of TiO<sub>2</sub> as a high index material between a metallic substrate and a copper light reflecting layer in the same field of endeavor for the purpose of increasing the durability (i.e. adhesion and corrosion resistance) and optical reflectance (i.e. longevity) of a metallic reflecting mirror.

Therefore, it would have been obvious and/or within the level of one of ordinary skill in the art at the time the invention was made to substitute the high index material of chromium

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employed by Sakamoto with a similar high index material of  $\text{TiO}_2$ , as taught by Ota et al, in order to increase the durability (i.e. adhesion and corrosion resistance) and optical reflectance (i.e. longevity) of a metallic reflecting mirror.

5. Claims 6-9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi ('502) in view of Ota et al ('003).

Taniguchi discloses a metallic rotary polygonal mirror comprising a substrate (1) made of aluminum or aluminum alloy, an intermediate layer (2) of Cr having a thickness within the range recited by applicant, a metallic reflective layer (3) of Cu having a thickness within the range recited by applicant and at least two protective layers (4, 5), wherein a first protective layer (4) is of  $\text{Al}_2\text{O}_3$  having a thickness within the range recited by applicant and a second protective layer (5) which can be of  $\text{SiO}_2$  and wherein the mirror has a surface reflectance of at least 95 percent, note figures 1-3 along with the associated description thereof, except for explicitly stating that the intermediate layer comprises  $\text{TiO}_2$ .

Ota et al teaches it is well known to use an intermediate layer of  $\text{TiO}_2$  as a high index material between a metallic substrate and a copper light reflecting layer in the same field of endeavor for the purpose of increasing the durability (i.e. adhesion and corrosion resistance) and optical reflectance (i.e. longevity) of a metallic reflecting mirror.

Therefore, it would have been obvious and/or within the level of one of ordinary skill in the art at the time the invention was made to substitute the high index material of chromium employed by Sakamoto with a similar high index material of  $\text{TiO}_2$ , as taught by Taniguchi, in order to increase the durability (i.e. adhesion and corrosion resistance) and optical reflectance (i.e. longevity) of a metallic reflecting mirror.

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6. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication should be directed to R.D. Shafer at telephone number (571) 272-2320.

RDS

April 28, 2004

*R.D. Shafer*  
R.D. SHAFER  
PATENT ATTORNEY  
APR 28 2004